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25X1X	323-4 (1953). These two Soviet scientists are entirely new this is the	
23/1/	first time ever seen them mentioned; or that ever read any publi-	25X1X
	cation of theirs. The work described in their article is an amplification or a modification of the method of making organic passphits	25X1X
	which Arbuzov has used in the USSR. In other words.	25X1X
	work of Kuskov and Gradis is a new modification of that method. Organic phos-	
	phites are used as intermediates in the making of other phosphorous compounds.	
	Here again, these organic phosphites possess large molecules and are useful in making insecticides, but would not be useful in making such compounds as nerve	
	gas because they are not readily volatile.	
5.	Because the three Soviet articlesmentioned above supplement the	25X1X
	earlier publications along these lines, translated and digested the efore- said publications in the order in which they are hereinabove listed, as follows:	25X1X
	A series of aryl-substituted thisphosphates were prend. All were less active	
	insecticides than Parathion. The compounds were pread by the coupling of	
	(RO) 2PSC1 with Arona. Generally increase of the size of the OR radical decreased	
	the insecticidal action. Replacement of NO2 by GNB group greatly reduced insecti-	
	cidal activity. Introduction of balogens slightly raised insecticidal activity.	
	The preps were made in PhOl suspension with a few intps of pyridine as catalyst	
	at 110-30°. The following were prepa: 24% (EtO) 2PB (CC H4 OMe-o), bg170-4°,	
	d ₂₀ 1.1672, r _D ²⁰ 1.5990; m-aralog, 564, b _{0.02} 97°, d ₂₀ 1.1483, r _D 1.5050; (Eto) ₂ P8-	
	(OC6H ₄ OEt-m), 21%, bg170-80°, d ₂₀ 1.1288, m _D 201.5045; its Pro analog, 26%, bg170-	
	80°, d ₂₀ 1.1020, r _D ²⁰ 1.5038; its Buo analog, 17%, b _{0.35} 140-50°, d ₂₀ 1.1001,	
	n 1.5028; its Phom ₂ 0 arabing, 25%, b _{0.05} 140-5°, d ₂₀ 1.1645, n 1.5620; (Pro) ₂ Ps-	
	(OC6H,OMS-C), 24%, 10.05117, d.2.1288, 201.5120; the meanalog, 18%, b3130-	
	50°, d ₂₀ 1.1206, p ₁ 1.4942: 154 = Eto analog, 18%, b _{0.09} 110-8°, d ₂₀ 1.0949,	
	nD 1.4920; its m-Pro atalice, 25%; b _{0.35} 120-46, d ₂₀ 1.0754, r _D 1.5040; (Eto) ₂ PS-	
	(OC ₆ H ₄ OMe-F), 46%, b _{0.1} 117-22, d ₂₀ 1.1910, r _D 1.5180; the CEt analog, 23%,	
	b _{0.1} 135-40°, d ₂₀ 1.1400, m _D ²⁰ 1.5140; its Pro analog, 22%, b _{0.3} 136, d ₂₀ 1.1086,	
	201.5080; its Buo analog, 46%, b _{0.2} 153, a ₂₀ 1.0905, r _D ²⁰ 1.5082; (Et0) ₂ PB-	
	(OC ₆ H ₃ (OEt)Br-4,2), 20%, t _{0.02} 142-50°, d ₂₀ 1.3596, r _D 2.5410; dte 2-Cl analog,	
	11%, $b_{0.15}$ 110-26°, d_{20} 1.2391, $m_{\mathbf{D}}^{20}$ 1.5285; (E-0) ₂ PS(∞_{c} H ₄ CNS- p), 10%, $b_{0.04}$ 130°,	
	d201.2121, 201.3510; (MeO) FB(OC H OEt-m), 18%, bo.02100-7, d201.1970,	
	n 1.5280; (Pro) PS(OC6 BuOMe-p), 48%, b 0.07 124°, a 20 1.1201, n 20 1.5100; its Eto	
	unalog, 52%, b _{0.025} 112-20, d ²⁰ 1.0956, n ²⁰ 1.5070; the Pro analog, 10%,	

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 $\begin{array}{l} {}^{b}_{0.2}{}^{148-50}{}^{\circ}, \, {\rm d}_{20}{}^{1.0221}, \, {\rm n}_{\bf T}^{20}{}^{1.4970}; \, {\rm its} \, \, {\rm Buo \,\, analog}, \, 30\%, \, {\rm b}_{0.025}{}^{112-20}{}^{\circ}, \, {\rm d}_{20}{}^{1.0082}, \\ {\rm n}_{\bf D}^{20}{}^{1.4950}; \, ({\rm Pro})_{2}{}^{\rm PS}({\rm oc}_{6}{}^{\rm H}_{3}({\rm OEt}){\rm Br-4,2}), \, 35\%, \, {\rm b}_{0.05}{}^{136-40}{}^{\circ}, \, {\rm d}_{20}{}^{1.3113}, \, {\rm n}_{\bf D}^{20}{}^{1.5290}; \\ {\rm its} \, \, 2\text{-Cl \,\, analog}, \, 19\%, \, {\rm b}_{0.05}{}^{121-6}{}^{\circ}, \, {\rm d}_{20}{}^{1.1883}, \, {\rm n}_{\bf D}^{20}{}^{1.5285}. \end{array}$

 ${\tt ArSiCl}_3$ react with AlCl $_3$ forming apparently ${\tt SiCl}_4$ and ${\tt ArAlCl}_2$; if the reaction mixture is treated with PCl_3 , the latter substance reacts, yielding $ArPCl_2$ and AlCl₃. If PCl₅ is the reagent, the product is ArPCl₄ and AlCl₃ in the form of a complex. With POCl, the complex yields ArPCl, and AlCl, POCl, treatment with 80, converts ArPCl₄ to ArPCCl₂, thus affording a convenient method of prepn of various aryl organophosphorus compounds. Heating 100 g PhSiCl3, 69.3 g AlCl3 and 65 g PCl₃ 2 hrs at 80°, followed by distn of SiCl₄ under reduced pressure (94.4%), and slow addn to the viscous residue of 85.8 g POCL gave a granular ppt of AlCl3, POCL complex. This was sepd and washed with petr ether, the washings combined with the filtrate gave 83.4% PhPCl₂, b_{e7}140-1°, d₂₀1.3180. A mixture of 20 g PhSiCl and 13.9 $_{\rm G}$ AlCl $_{\rm 3}$ heated 10 hrs to 70-80 $^{\circ}$, then freed of SiCl $_{\rm 4}$ in vacuo, (87% obtained), was treated slowly with 13 g PCl3; the riquid mass was kept 1 hr at 80-90°, then was treated with 17.2 g POCl₃; the above procedure of isolation gave 76% $PhPcl_2$, $b_{56}l^{140}$. Heating 10 g Ph_2Sicl_2 , 11.6 g $Alcl_3$, and 11 g Pcl_3 3 hrs at 80° , followed by distn of ${\rm SiCl}_{4}(92.7\%)$, and treatment with 14.3 g ${\rm POCl}_{3}$ gave 80.4% PhPcl2, 655138-9°. p-clo6H2Sicl3 (10 g), 6 g Alcl3 and 5.7 g PCl3 heated 2 hrs at 80° , freed of $SiCl_{14}$ by distn (90.7%), and treated with 7 g $POCl_{3}$ gave 6.6 g (77.4%) p-clc₆H₄Fcl₂, b 252-3°, d₂₀1.4203. Similarly p-Brc₆H₄Bicl₃ gave 72.6% p-BrC6H, PCl2, b 2700, d201.6801; this added to H2O gave p-BrC6H4FO2H2, m 142.3° (from dil EtOH). p-MeC₆H₄SiCl₃ similarly gave 85.3% p-MeC₆H₄PCl₂, b 243-4°, m 24.5°. To 30.2 g AlCl $_3$ and 39.4 g PCl $_5$ was added with stirring 40 g PhSiCl₃ and the mixture was kept 2 hrs at 80-5° (2 layers form); after distn of SiCl, under reduced pressure (89.6% recovered), the cooled residue was treated slowly with 38.2 g POCl and kept 1 hr at 70°, after which the mass was aild with 40 ml CCl_{l_1} and treated with SO_2 until heat evolution ceased. The liq portion was sepd and distd yielding, after removal of SOCl2, 4 g PhSiCl3, b 193-9°, and

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19.6 g (18.8 g pure; 45.6%) PhPOCl₂, b 250-9° (crude), b 256-8° (pure), d₂₀ 1.3700. Heating 30 g PhSiCl₃ and 20.7 g AlCl₃ 4 hrs at 80°, followed by cooling to 30° and addn of 68.7 g POCl₃, heating 1 hr at 80°, removal of low boiling materials in vacuo and distn of the residue, gave 14.2 g SiCl₄, 31.2 g PCCl₃ and intermediate fractions. The semisolid residue was extd with petr ether, and the combined exts on distn gave 5 g POCl₃ and 10 g PhSiCl₃, leaving a residue which reacted vigorously with H₂O. Thus POCl₃ in contrast to PCl₅ does not react with PhAlCl₂.

Heating (EtO)₂POH with various alcs in the presence of the corresponding RONa only transesterification takes place, yielding (RO)₂POH. Yields of 85% are common with only a small amount of RONa being necessary, although the use of even molar quantities of the catalyst fails to change the course of the reaction. Thus 0.3 mole ROE containing 0.2 g Na was mixed with 13.8 g (EtO)₂POH and heated under a simple fractionating column until the vapor temp was maintained at 90-5°, gave the desired (RO)₂POH. Thus were prepd (PrO)₂POH, 86%, b₁70-2°; (BuO)₂POH, 84.5%, b₁₀115°; (iso-BuO)₂POH, 87%, b₁₃111-13°; (iso-AmO)₂POH, 88%, b₃99-100°; (C₆H₁₁0)₂-POH, 70%, b₃152-3°, the latter prepn of the cyclohexyl deriv required bath temp 160-90°; the others gave good results at somewhat lower temps. The results are quite contrary to those claimed by M Janczak or M Janczakowna (Rozniki Chem 6, 110 (1926), and 4, 180 (1924)) who reported formation of Et₂O and (EtO)P(O) (H)ONa. The prepn of (EtO)₃P and (EtO)P(O) (OH)ONa reported by J is also in doubt.

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